

IN THE CLAIMS:

The following listing of the claims replaces all earlier listings and all earlier versions.

1. (Original) An image processing system in which first and second image processing apparatuses are connected via a serial bus,

wherein said first image processing apparatus comprises control means for controlling distribution of image processing between said two apparatuses on the basis of performance of said first image processing apparatus and performance of said second image processing apparatus.
2. (Original) The system according to claim 1, wherein

said first and second image processing apparatuses can commonly execute a plurality of image processes, and

said control means distributes the plurality of image processes to said first and second image processing apparatuses.
3. (Original) The system according to claim 2, wherein when said first image processing apparatus has higher performance, said control means distributes many image processes to said first image processing apparatus.

4. (Original) The system according to claim 3, wherein said control means acquires apparatus information of said second image processing apparatus via said serial bus, and controls distribution of image processing in said first and second image processing apparatuses on the basis of the apparatus information.

5. (Original) The system according to claim 4, wherein the apparatus information contains performance information of said second image processing apparatus.

6. (Original) The system according to claim 5, wherein said control means calculates a time required for each image process in each of said first and second image processing apparatuses, and controls distribution of image processing in said first and second image processing apparatuses so as to minimize a total processing time of the image processes.

7. (Original) The system according to claim 1, wherein
said second image processing apparatus also comprises control means for
controlling distribution of image processing, similar to said first image processing
apparatus, and

said control means of said first and second image processing apparatuses
determine which of said control means controls distribution of image processing.

8. (Original) The system according to claim 7, wherein each control means determines that an apparatus exhibiting higher performance controls distribution of image processing.

9. (Original) The system according to claim 1, wherein
said first image processing apparatus is an image input apparatus for inputting image data, and
said second image processing apparatus is an image output apparatus for outputting the image data transferred from said image input apparatus via said serial bus.

10. (Original) The system according to claim 1, wherein
said second image processing apparatus is an image input apparatus for inputting image data, and
said first image processing apparatus is an image output apparatus for outputting the image data transferred from said image input apparatus via said serial bus.

11. (Original) The system according to claim 1, wherein the image data is isochronously transferred.

12. (Original) The system according to claim 1, wherein said serial bus is a bus compatible or complying with the IEEE 1394 standard.

13. (Original) The system according to claim 1, wherein said serial bus is a bus compatible or complying with the USB standard.

14. (Original) An image processing apparatus connected to another image processing apparatus via a serial bus, comprising:

detection means for detecting performance of said another image processing apparatus;

determination means for determining optimal distribution of image processing between said apparatus and said another image processing apparatus on the basis of a detection result; and

image processing means for performing image processing on the basis of a determination result.

15. (Original) An image processing apparatus connected to another image processing apparatus via a serial bus, comprising:

notification means for notifying said another image processing apparatus of performance of said apparatus;

reception means for receiving distribution of image processing determined in said another image processing apparatus; and

image processing means for performing image processing on the basis of the received distribution of image processing.

16. (Original) A control method of an image processing system in which first and second image processing apparatuses are connected via a serial bus, comprising the step of:

in the first image processing apparatus, controlling distribution of image processing between the two apparatuses on the basis of performance of the first image processing apparatus and performance of the second image processing apparatus.

17. (Original) A recording medium which records a control program of an image processing system in which first and second image processing apparatuses are connected via a serial bus, wherein the program comprises at least:

a code of controlling, in the first image processing apparatus, distribution of image processing between the two apparatuses on the basis of performance of the first image processing apparatus and performance of the second image processing apparatus.

18. (Original) An image processing system in which first and second image processing apparatuses are connected via a serial bus,

wherein said first and second image processing apparatuses respectively comprise first and second control means for controlling distribution of image processing between said two apparatuses, and determine which of said first and second control means acquires control.

19. (Original) The system according to claim 18, wherein the control is determined to be given to an apparatus exhibiting higher performance.

20. (Original) The system according to claim 18, wherein
said first and second image processing apparatuses can commonly execute a plurality of image processes, and
said first and second control means distribute the plurality of image processes to said first and second image processing apparatuses.

21. (Original) The system according to claim 20, wherein when said first image processing apparatus has higher performance, said first and second control means distribute many image processes to said first image processing apparatus.

22. (Original) The system according to claim 21, wherein said first and second control means acquire pieces of apparatus information of partner apparatuses via said serial bus, and control distribution of image processing in said first and second image processing apparatuses on the basis of the pieces of apparatus information.

23. (Original) The system according to claim 22, wherein the pieces of apparatus information contain pieces of performance information of the partner apparatuses.

24. (Original) The system according to claim 23, wherein said first and second control means calculate a time required for each image process in each of said first and second image processing apparatuses, and control distribution of image processing in said first and second image processing apparatuses so as to minimize a total processing time of the image processes.

25. (Original) The system according to claim 18, wherein connection IDs are uniquely determined every time said first and second image processing apparatuses are connected to the system, and which of said first and second control means acquires the control is determined based on the connection IDs.

26. (Original) The system according to claim 18, wherein said first image processing apparatus is an image input apparatus for inputting image data, and said second image processing apparatus is an image output apparatus for outputting the image data transferred from said image input apparatus via said serial bus.

27. (Original) The system according to claim 26, wherein the image data is isochronously transferred.

28. - 37. (Canceled)

38. (Currently Amended) An image processing system in which an image input apparatus and an image output apparatus are connected via a serial bus, wherein

said image input apparatus comprises:

input means for inputting image data of a first format;

determination means for determining whether to convert the image data of the first format into a second format, wherein said determination means determines whether to convert a format of the image data on the basis of an empty state of the buffer in said image output apparatus;

first conversion means for converting the image data of the first format into the second format on the basis of a determination result; and

first communication means for transmitting the image data of the first or second format to said image output apparatus, and

said image output apparatus comprises:

second communication means for receiving the image data transferred from said image input apparatus;

holding means for temporarily holding the received image data in a buffer having a predetermined capacity;

second conversion means for, if the image data held in the buffer has the first format, converting the image data into the second format; and

output means for sequentially outputting the image data of the second format.

39. (Original) The system according to claim 38, wherein the first format is a compressed data format, and the second format is a data format obtained by decompressing image data of the first format.

40. (Original) The system according to claim 39, wherein the first format is a JPEG format.

41. (Canceled)

42. (Currently Amended) The system according to claim ~~[[41]]~~ 38, wherein said determination means determines to convert the format of the image data when the buffer is full.

43. (Original) The system according to claim 42, wherein said determination means determines to convert the format of the image data when said serial bus is detected to be busy in said first communication means.

44. (Original) The system according to claim 42, wherein
said second communication means notifies said image input apparatus of
buffer information representing the empty state of the buffer, and
said determination means determines whether to convert the format of the
image data on the basis of the buffer information.

45. (Original) The system according to claim 44, wherein
said second communication means issues an image data format conversion
request to said image input apparatus on the basis of the empty state of the buffer, and
when the format conversion request is received, said determination means
determines to convert the format of the image data.

46. (Original) The system according to claim 45, wherein said second
communication means issues the format conversion request when the buffer is full.

47. (Original) The system according to claim 38, wherein
said determination means determines in units of predetermined blocks
whether to convert a format of the image data, and
each of said conversion means converts the image data of the first format
into the second format for all blocks after a block said determination means determines to
convert.

48. (Original) The system according to claim 38, wherein
said determination means determines in units of predetermined blocks
whether to convert a format of the image data, and
each of said conversion means converts the image data of the first format
into the second format for only a block said determination means determines to convert.

49. (Original) The system according to claim 47, wherein said determination means determines not to convert the format of the image data for a first block in the image data.

50. (Original) The system according to claim 47, wherein said image input apparatus further comprises:

decision means for comparing performance of said first conversion means with performance of said second conversion means for a first block in the image data, and deciding to perform conversion processing by conversion means exhibiting higher performance.

51. (Original) The system according to claim 38, wherein said serial bus is a bus compatible or complying with the IEEE 1394 standard.

52. (Original) The system according to claim 38, wherein said serial bus is a bus compatible or complying with the USB standard.

53. and 54. (Canceled)

55. (Currently Amended) A control method of an image processing system in which an image input apparatus and an image output apparatus are connected via a serial bus, the image output apparatus having a buffer, said method comprising:

in the image input apparatus,

the input step of inputting image data of a first format;

the determination step of determining whether to convert the image data of the first format into a second format, wherein the determination step comprises determining whether to convert a format of the image data on the basis of an empty state of the buffer in the image output apparatus;

the first conversion step of converting the image data of the first format into the second format on the basis of a determination result; and

the transmission step of transmitting the image data of the first or second format to the image output apparatus, and

in the image output apparatus,

the reception step of receiving the image data transferred from the image input apparatus;

the holding step of temporarily holding the received image data in [[a]] the buffer, which has having a predetermined capacity;

the second conversion step of, if the image data held in the buffer has the first format, converting the image data into the second format; and

the output step of sequentially outputting the image data of the second format.

56. (Original) The method according to claim 55, wherein the first format is a compressed data format, and the second format is a data format obtained by decompressing image data of the first format.

57. (Canceled)

58. (Currently Amended) A recording medium which records a control program of an image processing system in which an image input apparatus and an image output apparatus are connected via a serial bus, the image output apparatus having a buffer wherein the control program comprises at least:

in the image input apparatus,

a code of the input step of inputting image data of a first format;

a code of the determination step of determining whether to convert the image data of the first format into a second format, wherein the determination step comprises the step of determining whether to convert a format of the image data on the basis of an empty state of the buffer in the image output apparatus;

a code of the first conversion step of converting the image data of the first format into the second format on the basis of a determination result; and

a code of the transmission step of transmitting the image data of the first or second format to the image output apparatus, and

in the image output apparatus,

a code of the reception step of receiving the image data transferred from the image input apparatus;

a code of the holding step of temporarily holding the received image data in [[a]] the buffer, which has ~~having~~ a predetermined capacity;

a code of the second conversion step of, if the image data held in the buffer has the first format, converting the image data into the second format; and

a code of the output step of sequentially outputting the image data of the second format.